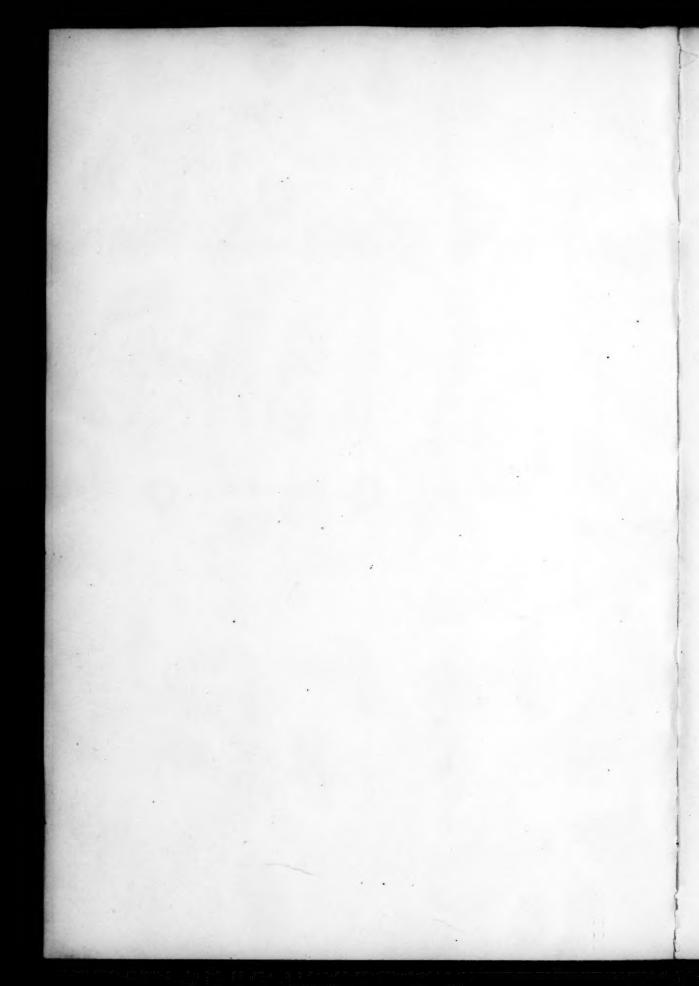
THE ASTROPHYSICAL JOURNAL



THE

ASTROPHYSICAL JOURNAL

An International Review of Spectroscopy and Astronomical Physics

EDITORS

GEORGE E. HALE

Solar Observatory of the Carnegie

Institution

EDWIN B. FROST Yerkes Observatory of the University of Chicago

COLLABORATORS

J. S. AMES

Johns Hopkins University

A. BÉLOPOLSKY

Observatoire de Poulkova

W. W. CAMPBELL

Lick Observatory

HENRY CREW

Northwestern University

N. C. DUNÉR

Astronomiska Observatorium, Upsala

C. S. HASTINGS

Yale University

WILLIAM HUGGINS
Tulse Hill Observatory, London

H. KAYSER
Universität Bonn

A. A. MICHELSON University of Chicago

ERNEST F. NICHOLS

Columbia University

E. C. PICKERING

Harvard College Observatory

C. RUNGE
Technische Hochschule, Hannover

P. TACCHINI
Osserv. del Coll. Romano, Rome

H. C. VOGEL

Astrophysikalisches Obs., Potsdam

F. L. O. WADSWORTH Morgantown, W. Va.

C. A. YOUNG

Princeton University

VOLUME XXI JANUARY—JUNE, 1905

CHICAGO

The University of Chicago Press
1905

PRINTED AT
The University of Chicago Press
CHICAGO

CONTENTS

NUMBER I.

RADIATION THROUGH A FOGGY ATMOSPHERE. Arthur Schuster	PAGE
THE REVISION OF ROWLAND'S SYSTEM OF STANDARD WAVE-LENGTHS.	
Lewis E. Jewell	23
THE BRUCE PHOTOGRAPHIC TELESCOPE OF THE YERKES OBSERVATORY.	
E. E. Barnard	35
THE SPECTROHELIOGRAPH OF THE POTSDAM OBSERVATORY. P. Kempf -	49
On the Determination of Radial Velocities at Poulkova. A. Bélo- polsky	55
On the Spectrum of Magnesium. James Barnes	74
MINOR CONTRIBUTIONS AND NOTES: Grant by the Smithsonian Institution	
to the Astrophysical Journal, 81; Note on Additional Triplets in the	
Arc Spectrum of Strontium, A. Fowler, 81.	
NUMBER II.	
SPECTRA OF WEAK LUMINESCENCES. Harry W. Morse	83
THE SOLAR ORIGIN OF TERRESTRIAL MAGNETIC DISTURBANCES. E. Walter Maunder	
THE EFFECT OF CAPACITY AND SELF-INDUCTION UPON WAVE-LENGTH	101
IN THE SPARK SPECTRUM. George W. Middlekauff	116
A STUDY OF THE CONDITIONS FOR SOLAR RESEARCH AT MOUNT WILSON,	110
CALIFORNIA. George E. Hale	124
THE SOLAR OBSERVATORY OF THE CARNEGIE INSTITUTION OF WASHING-	
TON. George E. Hale	151
INTENSITY OF GRATING SPECTRA. R. W. Wood	173
THE VARIABLE RADIAL VELOCITY OF Sirius. W. W. Campbell	176
A LIST OF NINE STARS WHOSE RADIAL VELOCITIES VARY. W. W. Camp-	
bell and Heber D. Curtis	185
ON THE RADIAL VELOCITIES OF Polaris, η Piscium, ε Aurigae, AND β Orionis.	
W. W. Campbell and Heber D. Curtis	191
MINOR CONTRIBUTIONS AND NOTES: On the Comparative Luminosity	+
and Total Radiation of the Solar Corona, S. P. Langley, 194; Note	
on the Narrow Triplets in the Spectra of Calcium and Strontium,	
F. A. Saunders, ros.	

CONTENTS

NUMBER III. PAGE THE OPTICS OF THE SPECTROSCOPE. Arthur Schuster 197 SOME NEW DETERMINATIONS OF THE REFLECTING POWERS OF GLASS AND SILVERED GLASS MIRRORS. C. A. Chant - - -211 SPECTRA FROM THE WEHNELT INTERRUPTER. II. Harry W. Morse SOME EMISSION SPECTRA OF METALS AS GIVEN BY AN ELECTRIC OVEN. A. S. King - - - - - - - - -236 THE TEMPERATURE OF THE SOLAR ATMOSPHERE. Arthur Schuster 258 THE WORK OF THE RUMFORD SPECTROHELIOGRAPH. George E. Hale DISPERSION BANDS IN ABSORPTION SPECTRA. W. H. Julius -SPECTROHELIOGRAPHIC RESULTS EXPLAINED BY ANOMALOUS DISPERSION. W. H. Julius - - - - - - - - -DISPERSION BANDS IN THE SPECTRA OF & Orionis AND Nova Persei. W. H. Julius - - - - - - - - -286 MINOR CONTRIBUTIONS AND NOTES: Stars Having Peculiar Spectra, Edward C. Pickering, 292. BOOKS RECEIVED -NUMBER IV. OBSERVATIONS OF THE RADIAL VELOCITIES OF THIRTY-ONE STARS MADE AT THE EMERSON McMillin Observatory. H. C. Lord - 297 THE MOTION OF THE MATTER COMPOSING THE TAIL OF THE COMET 1903 IV, OBSERVED JULY 24, 1903. R. Jaegermann -ON THE ENHANCED LINES OF IRON, TITANIUM AND NICKEL. F. E. Baxandall -------NOTE ON THE CONDITIONS ATTENDING THE APPEARANCE OF THE ARGON LINES IN AIR. A. S. King - - - - -OBSERVATIONS WITH THE RUMFORD SPECTROHELIOGRAPH. Philip Fox -ON THE SPECTRA OF THE ALKALINE-EARTH FLUORIDES IN THE ELECTRIC Arc. Ch. Fabry - - - - - - - -THE "OPTICAL POWER" OF THE ATMOSPHERE AND ITS MEASUREMENT. Karl Exner and W. Villiger - - - - - - -A LIST OF TWELVE STARS WHOSE RADIAL VELOCITIES VARY. W. H. ON THE COMPUTATION OF THE MOON'S SPECTROGRAPHIC VELOCITY NEAR 376 379 REVIEWS: An Introduction to the Theory of Optics, Arthur Schuster (E. F. N.), 382; Astronomical Discovery, Herbert Hall Turner (C. A. Y.), 383; Spectroscopic Observations of the Rotation of the Sun, J. Halm (W. S. A.), 385. PIETRO TACCHINI -387

CONTENTS		vii
NUMBER V.		
MONOCHROMATIC PHOTOGRAPHS OF THE Orion NEBULA. J. Hartmann	•	389
HIGH-TEMPERATURE RADIATION. P. G. Nutting	~	400
SPECTRA OF WEAK LUMINESCENCES. II. Harry W. Morse -	-	410